

REMARKS

With this Amendment, Applicant amends claims 1, 4, 6, 7 and 10 and adds new claims 13-23. Therefore, claims 1-23 are all the claims currently pending in the present Application.

I. Allowable Subject Matter

The Examiner indicates that claims 3, 6, 9 and 12 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. At this time, Applicant respectfully submits that the rewriting of these claims be held in abeyance until the Examiner considers the following arguments for patentability of the rejected claims.

II. Claim Objection due to Insufficient Antecedent Basis

The Examiner objects to the use of “said platen roller” in lines 12, 13 and 20 of claim 1, line 3 of claim 4, line 5 of claim 6, line 16 of claim 7 and line 3 of claim 10, because it is not certain whether the “said platen roller” means one platen roller or a plurality of platen rollers. Applicant submits that the Examiner’s objection should be withdrawn as “said platen roller” used in the above claims 1, 4, 6, 7 and 10 is replaced by “at least one said plate roller” as shown in the attached amendments.

III. Claim Rejection under 35 U.S.C. 103(a)

Claims 1, 2, 4, 7, 8 and 10 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Ohara et al. (hereinafter “Ohara”) [U.S. Patent No. 5,153,605] in view of Fukuoka et al. (hereinafter “Fukuoka”) [U.S. Patent No. 5,820,274].

Claims 5 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohara et al. (hereinafter “Ohara”) [U.S. Patent No. 5,153,605] in view of Fukuoka et al. (hereinafter “Fukuoka”) [U.S. Patent No. 5,820,274] and Yamaguchi et al. [U.S. Patent No. 6,554,394].

A. Claims 1 and 7

The Examiner alleges: i) Ohara (Cols. 4-5 and Figs. 2-3) discloses the rotating speed detector disposed on said platen roller for detecting rotating speed of said platen roller as in claim 1; and ii) Fukuoka (Cols. 9-12 and Figs. 1-7) discloses the controller for recording image by driving said thermal head of each printing unit as in claim 1. Fukuoka is further cited as disclosing the preamble of claim 1 in which the claimed thermal printer is described as having a plurality of printing units where each printing unit includes a platen roller and a thermal head.

With respect to the Ohara disclosure, the Examiner appears to allege that the encoder 5b (Fig. 2) correspondingly discloses the rotating speed detector of claim 1. However, we find that, even though the encoder 5b is disposed on the platen roller 5 as is the rotating speed detector in claim 1, the encoder 5b is not detecting the rotating speed of the platen roller 5 as does the rotating speed detector of claim 1. The encoder 5b is provided only for generating predetermined reference pulses and control pulses in connection with a number of rotations of the roller and a number of pulses per rotation and per line. To the extent the encoder 5b relates to platen rollers, it does not inherently track any speed but rather can operate only on displacement independent of time. On the contrary, the rotating speed detector of claim 1 detects the rotating speed of the platen roller which is used by the controller in claim 1 to calculate the

transporting correction quantity of a recording sheet transported in the thermal printer. Nowhere does Ohara teach or suggest the functional element of the rotating speed detector of claim 1.

As to the Fukuoka disclosure, the Examiner alleges that the control section (Fig. 2 or Fig. 4) of Fukuoka correspondingly discloses the controller of claim 1 without elaborating where and how the cited portions of Fukuoka teach or suggest the claim 1 controller. It appears that Fukuoka's controller controls when to start printing of each printing unit, i.e., yellow, magenta and cyan. However, Fukuoka fails in teaching or suggesting the claim 1 controller which calculates the transporting correction quantity of the recording sheet from the rotating speed fluctuation amount of the platen roller. Indeed, Fukuoka's controller also performs a series of calculations to find out a recording start position by each thermal head. Nonetheless, such calculation is not directed to obtaining the transporting correction quantity using the detected rotating speed of the platen roller.

In addition, the values, Y2 and Y3, calculated by the Fukuoka controller are not such variables as produced by speed fluctuation of an external element such as the platen roller. They are outputs from simple calculations between predetermined distance (or length) values Y_1 and S_0 to determine a predetermined printing start position, while the factors associated with the claim 1 controller are the rotating speed of the platen roller detected by the rotating speed detector. Thus, Fukuoka's controller should not be teaching or suggesting the claim 1 controller which calculates the transporting correction quantity based on the detected rotating speed.

Further, even when viewed over a combination of Ohara and Fukuoka, claim 1 cannot be rendered obvious, because Ohara's encoder 5b does not detect a rotating speed of the

platen roller 5, and Fukuoka does not have a controller calculating a transporting correction quantity based on the detected rotating speed.

In view of the above, Applicant submits that claim 1 along with corresponding method claim 7 is patentable over the cited references, and respectfully requests the Examiner to reconsider and withdraw the rejection.

B. Claims 2 and 8

It is also alleged that the claim 2 memory is disclosed by Ohara (Col. 4 and Figs 2-3). Indeed there are disclosed a couple of memories in the Ohara's thermal printer block diagram. One may say, further, that there could be more memories not shown in the block diagram. However, there is not a memory, whether it is shown or inherent, such as the claim 2 memory which stores data table where the rotating speed fluctuation amount is associated with the transportation correction quantity. Note that the data memory 10 of Ohara stores image data to print, and the correction data memory 23 stores density variations used for pre-heating of a thermal head. No similarity is found between those data stored in the Ohara memories and the data in the claim 2 memory. The purpose and function of any of the Ohara memories cannot match those of the claim 2 memory.

Thus, Applicant submits that claims 2 and 8 should also be patentable.

C. Claims 4, 5 and 10

Since claims 4, 5 and 10 are dependent upon claims 2, 4 and 8, Applicant respectfully submits that the rejected claims should be allowable at least by virtue of their dependency.

IV. New Claims 13-23

With this Amendment, Applicant adds new claims 13-23 in order to more fully cover various aspects of Applicant's invention as disclosed in the specification and to provide a more general scope of protection. Applicant respectfully requests the entrance and allowance of these new claims.

V. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

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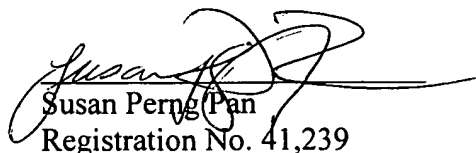
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